

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/GB2004/002806

technical field, suggested also by D2 (fig.1 to 10) or D3 (fig.2 to 3A), and do not appear to involve an inventive step.

**V-4 Claims 18, 19 and 21**

The feature of claim 18 is not disclosed by any of the prior art documents as in D1 appears that the tool is unlocked just for the time needed to move the obturating member from one position to the other and not also during the drilling operations.

The feature of claims 19 and 21 is not disclosed or suggested by the prior art documents as the tool of D1 can only be opened or actuated by pumping fluid which excludes pumps being off.

Therefore, claims 18, 19 and 21 meet the requirement for inventive step of Art. 33(3).

**VII - Certain defects**

- VII-1 The independent claims are not properly cast in the two part form, with those features which in combination are part of the closest prior art (D1) being placed in the preamble, contrary to the requirements of Rule 6.3(b) PCT.
- VII-2 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- VII-3 Contrary to the requirements of Rule 5.1(a)(ii)PCT, the relevant background art disclosed in document D1 is not mentioned in the description, nor is this document identified therein.

The subject-matter of claim 1 is therefore not new and the claim does not meet the novelty requirement of Art. 33(2)PCT.

Similar arguments apply to claim 14 in terms of method steps.

**V-2 Claims 2 to 6, 11 to 13, 15 to 17, 20 and 22**

The features of the following claims are also disclosed by D1:

- claim 2: 141
- claim 3: 114, 115
- claim 4: recesses limited by 131, 132, 133, 134
- claim 5: 110, 140
- claim 6: fig.2A
- claims 11 and 12: 126
- claim 13: implicit feature - PCT/GL/ISPE/1 12.01 - in order to provide a path with minimal flow resistance and split the fluid flow instead of redirecting it to the second outlet
- claim 15: paragraph 65, lines 11-13 (pressure increased to a predetermined level)
- claim 16: fig.3, closed and locked and the pups turned off as the ball already passed through the surface 110
- claim 17: implicit feature as while drilling the circulation is not required and fluid is pumped to wash the cuttings and the drill string is pushed in the drilling direction which results in compression
- claim 20: fig.3 when the tool is locked but fluid is still pumped in order to push the ball through
- claim 22: as no strict sequence of steps is implied in claim 22, also D1 discloses a cycle with the sequence (c), (b), (a), (f), (e), (d).

Therefore, claims 2 to 6, 11 to 13, 15 to 17, 20 and 22 do not meet the requirement for novelty of Art. 33(2) PCT.

**V-3 Claims 7 to 10**

The features of claims 7 to 10 are merely normal design possibilities in the

Reference is made to the following documents:

D1: US 2003/0024706

D2: US 5 890 540

D3: US 6 173 795

**IV - Lack of unity of invention**

IV-1 Claim 18 does not appear to be part of the same inventive concept as claims 19 and 20, contrary Rule 13 PCT. Therefore, claims 18 and 19 or 20 cannot be part of the same application as independent claims.

**V - Reasoned statement with regard to novelty, inventive step or industrial applicability**

V-1 Claims 1 and 14

D1, which is considered as the closest prior art, describes a tool (fig.2) for circulating fluid in a well bore (paragraph 69, lines 1-3), the tool comprising a tubular assembly having a through passage between an inlet and a first outlet (fig.2), the inlet and first outlet being adapted for connection in a work string (fig.2), a second outlet (126) extending generally transversely of the tubular assembly; an obturating member (141, 142) movable between a first position (fig.3) closing the second outlet and a second position (fig.4) permitting fluid flow through the second outlet and, the obturating member including restraining means (114, 115) to actively retain the obturating member independently in the first and second positions (fig.3-4); an engagement mechanism (124, 140) actuatable between an engaged configuration, in which the obturating member is locked (fig.2A) in one of the first or second positions; and a disengaged configuration (fig.2B) in which the obturating member can move (fig.2C) to the other of the first and second positions; a fluid pressure actuation surface (110) coupled to the engagement mechanism (fig.2A) and biased by a spring (124) located between the tubular assembly (142) and the engagement mechanism (140); wherein variation of fluid pressure on the actuation surface controls actuation of the engagement mechanism (paragraph 65, lines 11-13) and stroking the tool (by applying more pressure) in the disengaged configuration (paragraph 65, lines 16-19 and paragraph 66, lines 1-4) moves the obturating member.

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	7-10, 18, 19, 21
	No: Claims	1-6, 11-17, 20, 22
Inventive step (IS)	Yes: Claims	18, 19, 21
	No: Claims	1-17, 20, 22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. IV Lack of unity of invention**

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1. ☐ In response to the invitation (Form PCT/ISA206) to pay additional fees, the applicant has:

☐ paid additional fees.

☐ paid additional fees under protest.

☐ not paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

☐ complied with

☒ not complied with for the following reasons:

see separate sheet

4. Consequently, this report has been established in respect of the following parts of the international application:

☒ all parts.

☐ the parts relating to claims Nos.

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments: